The Chilean Pension System

By
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1. Introduction

The introduction in the early 1980s of a privately managed pension system in Chile, based on individual capital accounts, has attracted world-wide attention. This reform – as well as other market oriented structural changes – and the significant improvement in Chilean economic performance has led many observers to conclude a direct link, especially through the rise in private domestic savings generated through the new pension system.

As is usually the case, things are somewhat less clear when examined in depth. Although there is ample evidence of the positive impacts of the new Chilean pension system, there are a number of issues that are not as good. These include the high – and rising – administration costs as well as the size of the fiscal guarantees involved. On the other hand, the very significant fiscal impact of the transition from a mature pay-as-you-go system to a private capital system should dampen the enthusiasm of many potential reformers who already face large fiscal challenges.

In the paper, we describe the new system and the reform process, with a special emphasis on the fiscal impacts. We conclude with a brief discussion of the issues still unresolved in the Chilean pension system.

2. The Old Regime

In the 1920s, Chile implemented a social security system aimed at providing retirement income for the elderly as well as other social benefits. From the early years, different pension schemes geared to servicing different occupational groups

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Table 1. **Contributors in the old pension system**

Institutions	Number of contributors	% Total
Servicio de Seguro Social	1 394 300	62.61
EMPART	430 000	19.31
CANAEMPU	264 200	11.86
Other	138 400	6.22
Total	2 226 900	100.00

Source: Superintendency of Pension Fund Administrators (AFPs).

coexisted. The differences between these schemes were not the result of a well designed social security policy, but rather of lobbying and interest group pressures. By the 1970s, and as a result of this trend, there were very significant differences in the benefits received by different groups of workers.

Although by 1979 there were 32 pension funds ("Cajas") in operation, three of them were dominant in terms of both members and contributions. A common feature of these funds was that they all operated under the pay-as-you-go system. Under this scheme, active contributors financed retirement payments to pensioners. It was expected that increasing obligations would be met both by drawing on the stock of accumulated savings as well as their accumulated net income. The system was linked to public finances through portfolio management. In order to avoid fraud and give a public guarantee to mandatory contributions, the surplus of the funds (contributions minus benefits) were transferred to the government for investment.

During the first decades of operation, the ratio of contributors to pensioners generated a sizeable surplus in the system. Among other problems, this generated incentives to increase benefits that were not sustainable when the system matured. Confronted with the option of reducing benefits or generating a fiscal surplus to finance the pension system deficit, the governments chose to raise the contribution rates. While in 1955 there was one pensioner for every 12.2 active affiliates, by 1980 this ratio had changed to 2.5 active affiliates for every pensioner.

The financing problem was made worse by mounting evasion of social security contributions. The operating rules encouraged workers and employers to pay just the legal minimum; they only became concerned about increasing the real value of contributions during the last few years of active working life when the contributions impacted the calculated value of pensions. Because of these financial problems, contribution rates had to be increased – by 1974, they represented more than 50% of the worker's monthly salary. Although they were cut by more than 20% during 1974-1980, they still represented 33.5%-42% of the pensionable

Table 2. **Global contribution rate**

Institution	1974	1980	Difference
Servicio de Seguro Social	56.60%	33.20%	23.40%
EMPART	64.50%	41.04%	23.46%
CANAEMPU	54.75%	32.50%	22.25%

Source: Superintendency of AFPs.

salary. This made the evasion problem even more serious, further reducing the financial health of the system. The maximum coverage of the system peaked in 1973 when 79% of active workers were contributing to the system. Coverage decreased slowly since then, reaching 64% in 1989. This trend is explained basically by evasion and an increase in the unemployment rate which rose from 3.3% in 1972 to 14.9% in 1975.

There was little relation between worker contributions and the benefits they derived from participating in the (traditional) social security system. In that sense, contributions were seen as taxes on labour, contributing to the poor performance of the labour market during the 1960s and 1970s. Although the system as a whole was neutral or slightly progressive, there were many inequities. Benefits were higher for the groups which exerted the most pressure; upper and middle class workers were able to get substantial benefits making the system increasingly unfair.

During the last years of the old pension system, contributions and investment returns were not sufficient to cover pension payments, increasing the fiscal grants to finance the system. Between 1977 and 1980, direct fiscal contributions grew at a rate of 8.5% per year.

The unfairness of the system, the fiscal consequences of the highly inefficient management of the funds, and the desire to reduce the role of the government in economic affairs, moved the government to introduce reforms in 1981. Law No. 3500,

Table 3. **Direct fiscal contribution to pensioner payments**

	% of GDP
1977	2.67%
1978	2.51%
1979	2.47%
1980	2.70%

Source: Cheyre (1991) and Central Bank.

approved in November 1980, created a new pension system based on individual capital accounts managed by private institutions.

The steps to prepare the ground for this reform were taken during 1974-79 when the government put in place a very tight fiscal programme in order to build up a budget surplus to finance the planned reform of social security. The alternatives – to finance the transition by increasing taxes or issuing public debt – were considered too risky from the fiscal point of view. The programme implied a significant public consumption reduction – wages as well as purchases – helped by the economic boom that the country experienced during those years. Two other important steps were taken during this period: the introduction of uniform rules for all pensions and a uniform retirement age of 65 for men and 60 for women for civilian pensions, which represented a rise of about five years for the average worker.

It is now possible to provide an evaluation of this important reform.

3. The New Pension System

The reform of the Chilean pension system – implemented in late 1980 and early 1981 – replaced the pay-as-you-go regime with a fully-funded pension system based on individual capital accounts, managed by private companies known as *Administradoras de Fondos de Pensiones* (AFPs).

To reduce political opposition at the time of the reforms and to increase interest in the new system, contributions rates were set at a level low enough to increase net "take-home" pay. This was financed by the above mentioned increase in the minimum retirement age. On average, workers that opted for the new regime obtained an 11% effective increase in net wages. In addition, and in order to recognise workers past contributions to the old system, the government issued special bonds – known as "recognition bonds" – and deposited them in the transferring workers individual capital accounts. The bonds are paid in full upon retirement. These bonds provided the link between the contributions to the old system and the new retirement funds.

The new system allows the workers to choose the AFP they want to affiliate with, to transfer their funds among them, and to have voluntary savings accounts. It emphasises uniformity of contributions and its structure of benefits covers old age, disability and survivors pensions. There is no collective membership, or any restrictions on mobility between competing funds. Moreover, AFPs cannot discriminate rates or commissions among different contributors, either as a class or individually.

3.1. *Coverage and Contributions*

All dependent employed workers (including civil servants) must contribute to the retirement system. It is, however, optional for self employed people. Paradoxically,

Table 4. **Average provisional cost**[1]
US$; December 1995

	Gross provisional cost (1)	Pensionable income (2)	(1)/(2) as %
1982	15	287	5.10
1983	20	242	8.27
1984	20	230	8.69
1985	20	299	6.68
1986	18	301	6.05
1987	16	288	5.49
1988	13	326	4.00
1989	12	336	3.54
1990	11	345	3.15
1991	12	371	3.10
1992	12	399	3.07
1993	13	429	3.07
1994	15	489	3.06
1995	15	500	3.06
1996	16	513	3.05

1. Gross Provisional Cost is defined as: GPC = FCC + FCF + (VCF*F)/12 + (AC*PI), where FCC is the fixed commission per contributor, FCF is the fixed commission on the accumulated fund of the individual capital account, VCF is the annual variable commission on the accumulated fund of the individual capital account, F is the accumulated fund, AC is the additional contribution and PI is the pensionable income. Pensionable Income is the real average pensionable income. This includes dependent and independent workers.

Source: Superintendency of AFPs.

the Armed Forces retained their own system. Contributions are equal to 10% of the monthly salary up to US$2 000. There is an additional contribution of 3% of salary as a premium for disability and term life insurance, making the effective contribution rate equal to 13% of the pensionable salary. The relatively low rate of contributions and the strong link between them and benefits play an important role in reducing evasion and stimulated participation in the system.

Considering the rates that the current system imposes on workers, the cost in terms of monthly salary is almost 30% lower than the one imposed by the old regime. On the other hand, the administrative costs charged by the AFPs in order to manage the funds affects directly the size of the individual fund and will show up at time of retirement, thus affecting the efficiency of the contributions. From 1983 to 1987, the average costs dropped significantly mainly due to the reduction in the operational costs and the elimination of some commissions. During 1988-1990, the change in the commission structure, combined with other factors, permitted the lowering of the provisional cost, thereby increasing the system's operational margin. This positive trend changed in the 1990's, notwithstanding significant and persistent gains in real wages. The blame falls on the rising share of marketing costs after membership matured and most of the growth in the number of affiliates is due to the normal increase in the size of the labour force. Competition among AFPs has not been in terms of prices and benefits to affiliates, but in terms of "accessibility" to potential customers, causing a big increase in the size of the sales force. This issue will be addressed in greater detail later in the paper.

Required contributions are tax deductible as is the income accrued to the accumulated fund during the contributor's active life. The system allows voluntary contributions to the individual capital accounts, up to an additional amount of US$2 000 per month in order to increase the necessary capital to finance an early retirement. These contributions are also tax deductible. Once the worker retires, their pension become subject to income tax as any other source of income. Affiliates can also have a second account independent of the capital account, as a voluntary savings account. They have free disposition of this fund but only four withdrawals per year are tax deductible, unless they go to increase the capital account where it is possible to transfer the funds. The tax treatment of this second account was based – until 1993 – on the final balance instead of the real returns on it. In 1993, the law changed the tax treatment of this account, now taxing the real returns received by the affiliate corresponding to the portion withdrawn.

3.2. *Pensions and Other Benefits*

The main benefit provided by the Chilean system is pensions based on individual capital accounts, *i.e.* the value of the pensions depends on the amount of funds accumulated and the rate of return of AFP's investment minus fees and commissions. The new regime considers three types of pensions: old age, disability and survivor pension.

When the system was introduced, the minimum retirement age was raised from 60 to 65 years for men and from 55 to 60 years for women. There is however the possibility of an early retirement.[1] When an individual retires, he has two options: he can buy a life annuity from an insurance company with the accumulated funds or make scheduled monthly withdrawals from his account. A life annuity assures a steady and known income stream, protecting against "excessive" longevity. On the other hand, monthly withdrawals – if the individual outlives the programme – assures the minimum pension guaranteed by the government for the rest of his life. If there is any balance left in the event of early death, it is inherited by his heirs. There is also a possibility of a lump sum withdrawal of any balance that exceed the necessary capital to pay a pension equivalent to 70% of the pensionable salary and is at least 120% of the minimum pension.

3.3. *Management and Operation of the System*

Pension funds in the new system can be managed only by specialised companies known in Chile as *Administradoras de Fondos de Pensiones* (AFP). These companies are set up as joint-stock companies and their only and exclusive objective is to manage pension funds. An AFP can be established by any group of shareholders. They are supervised by the Superintendency of AFPs and they are allowed to operate only one pension fund for all its affiliates. They have a minimum capital requirement of US$160 000 which rises with the number of affiliates (the minimum for 10 000 affiliates is US$650 000).

AFPs are allowed to freely charge fees and commissions for managing individual capital accounts. These are the main AFPs revenues and currently they consist of 1) a fee for opening a new account; 2) a proportional fee on contributions; 3) a fee for managing programmed pension withdrawals; 4) a fee for managing voluntary contributions; and 5) a flat fee per period when contributions are made. (At present, it is prohibited to charge exit fees.) This is done in order to encourage competition.

The system also has a reserve requirement of at least 1% of the total value of the fund. This requirement was set up to provide the AFPs with the necessary funds in case that they do not obtain the "minimum return" from its portfolio. The Chilean system imposes a maximum and a minimum return to the AFPs to pay their members, which are set in relation with the average performance of the whole system over the last 12 months. The minimum is either 50% of the average return across AFPs, or two percentage points lower than the average. In case the fund falls short of the minimum, the AFP has to make up the difference by withdrawing funds from its reserves. On the other hand, if the AFP has a real investment return above the 50% average for all the pension funds, or exceeds it by two percentage points, it has to deposit the excess funds in a "profitability reserve" account to be used in case its portfolio underperforms. AFPs must invest this reserve requirement in the same portfolio as the pension fund under its administration.

3.4. Investment Rules

There are very tight regulations established by law regarding the assets the AFPs can invest in. Safety and profitability are the principles behind these rules. These regulations have taken the form of maximum limits for holdings of particular types of financial instruments as approved by the Risk Classification Commission. This Commission was created in 1985 and its main function is to classify debt securities into several risk categories.

Investment rules have been relaxed since the system was created, giving a larger weight to the risk of the overall portfolio instead of relying on strict limits for specific instruments. In 1985, the funds were allowed to invest in domestic equities, and the limit has been relaxed several times afterwards. In 1990, they were allowed to invest abroad. This had very little effect, because of strong restrictions on the quality of the instruments and the high interest rate differential that strongly favoured investing in Chile.

Table 5. **Investment instruments**

Central bank maximum limits before and after the new capital market law

Instruments	Before			After		
1. Government securities		45%			50%	
2. Deposits and certificates guaranteed by financial institutions		100%			50%	
3. Mortgage bonds		100%			50%	
4. Public and private corporate bonds		100%		–		50%
5. Public and private stock-exchangeable corporate bonds				15%		
6. Stocks of open-end corporations	30%		40%		40%	
7. Stocks of open-end corporations[1]	30%					
8. Shares in real estate investment funds	30%				–	
9. Shares in corporate development investment funds	5%		20%		5%	
10. Shares in investment funds	20%				10%	
11. Shares in securitized-credit investment funds		Not eligible			10%	
12. Commercial paper		100%			20%	
13. Foreign securities	10%		10% fixed return	12% fixed		12% fixed return
			Not eligible variable return			6% variable return
14. Other publicly-offered instruments		Not eligible			5%	
15. Pension funds quotes		100%			Not eligible	
16. Hedging operations		Not eligible			15%	

1. The law does not provide for individual limits on said instruments. It does, however set an aggregate limit on real estate risks.

Source: Superintendency of AFPs.

3.5. *State Guarantees*

The government plays a role that goes beyond the supervision and regulation of the system. The pension system involves three types of government guarantees.

First, the government guarantees a minimum pension[2] to members. The minimum guaranteed is for pensioners that exhaust their accumulated funds in the case of programmed withdrawals, or if the income stream is lower than the minimum pension in the case of a life annuity. In both cases, recipients should have made contributions for at least 20 years.

Second, the government guarantees a minimum return in case that the AFP underperforms the limits imposed by the Superintendency. As was explained, a minimum return relative to the average performance of the system is expected of every AFP. They have to use their profitability fund and investment reserves in order to fill any shortfall in the rate of return. If the funds are insufficient to bring the actual return to the minimum level, the institution is liquidated and the balances of the individual capital accounts transferred to another AFP. In this case, the government covers the difference.

Third, the government guarantees pension payments to pensioners of any insurance company that becomes bankrupt.

4. Costs of the Transition – Effects on the Fiscal Budget

The system is still in a transition phase, the old pay-as-you-go system and the new capital system coexist, and this will continue until the benefits paid to the pensioners that remain in the old system cease (the closing date of the old system is estimated at around 2045). The transition from a pay-as-you-go system to a fully-funded one has major fiscal implications. In term of flows, the government faced a sharp decline in its income due to contributions that moved to the new system, while it fully funds pensions in the old system. The fiscal implications depend essentially on the sources of funds used to finance the reform. There are basically three ways to finance the transition: by debt, tax or a combination of both.

In Chile, in order to finance the reform, the government put in place a very tight fiscal programme to build up a sizeable budget surplus. By 1980, the budget surplus amounted to 5.5% of GDP. Although the alternative of debt financing was avoided for the first two years of the reform, the deep economic crisis of 1982-83 (GDP fell by about 15%, unemployment reached 30%) caused a big drop in government revenues and AFPs were allowed to invest half of their portfolio in Central Bank debt.

Table 6. **State provisional deficit**
Percent of GDP

	Recognition bond	Deficit in the old system	Total
1981	.01	4.09	4.10
1982	.08	8.22	8.30
1983	.17	7.33	7.50
1984	.20	7.50	7.70
1985	.24	6.46	6.70
1986	.32	5.98	6.30
1987	.38	5.02	5.40
1988	.36	4.84	5.20
1989	.44	4.06	4.50
1990	.51	4.09	4.60
1991	.48	4.02	4.50
1992	.52	3.78	4.30
1993	.63	3.87	4.50
1994	.74	3.76	4.50
1995	.90	3.50	4.40

Source: Arrau, 1992, 1996; Arenas y Marcel, 1993.

The reforms in the pension system have had three effects on the budget: *i*) the government paid pensions to those who remained in the old system, as well as those who were already retired; *ii*) the government had to finance Recognition Bonds for those who had made contributions to the old system and moved into the new one; and *iii*) the government has to guarantee minimum pensions for those in the new system.

It is not surprising that direct government contributions have been the major fiscal burden during the past years. However, we expect a gradual reduction of this component over time. In the medium-term, Recognition Bonds will gradually rise as people in the new system, but who have contributions in the old one as well, retire. Every individual who contributed for at least 12 months in the old system during the previous five years to November 1980, is eligible to receive a Recognition Bond. This bond correspond to the capital that the transferee needs to get an annuity equivalent to 80% of the pensionable salary that he received between June 1978 and June 1980, weighted by the number of years contributed over 35.[3] It yields a 4% return in real terms and it is payable only upon the retirement of members. The servicing and the payments of the bonds – which are deposited in active workers retirement accounts – will peak in 2005, when it will reach 1.2% of GDP (Arenas y Marcel, 1993).

In the long run, the state guarantee of a minimum pension will be the main fiscal risk. However, if a severe economic downturn should occur, then there is also a risk due to the minimum return guarantee in case of an AFP bankruptcy. The minimum pension risk is basically endogenous since it depends critically on the rules for early retirement and the value of the minimum pension. Another factor is the rate of return on the pension funds, but this will probably be a minor risk in the next decades since average (real) returns have exceeded by far the initial calculations.

5. System Results

Coverage. To analyse the degree of coverage of the Chilean pension system it is necessary to add up the coverage of both the old and the new system. In the new one, it is important to distinguish between those workers that are members of an AFP, those that have at one time or another enrolled in an AFP, and those who are active contributors to the new system.

In 1996, the number of affiliates to the new system was 5.57 million representing 99% of the labour force. The percentage of contributors is significantly smaller: 3.1 million in 1996, or just 59% of those employed. Adding the contributors to the old system, the total coverage of the Chilean pension system rose form 53% of total employment in 1982 to 65% in 1995. The relatively low percentage of important contributors is one of the most important weaknesses of the system and is explained basically by informality in labour markets, the low rate of contribution of self-employed and the moral hazard created by the existence of the government guarantee of minimum pensions.

Table 7. **Membership and contributors**

	Number of affiliates (A)	Number of contributors (B)	(B)/(A) %
1981	1 400 000	–	–
1982	1 440 000	1 060 000	73.61
1983	1 620 000	1 230 000	75.92
1984	1 930 353	1 360 000	70.45
1985	2 283 830	1 558 194	68.23
1986	2 591 484	1 774 057	68.46
1987	2 890 680	2 023 739	70.01
1988	3 183 002	2 167 568	68.10
1989	3 470 845	2 267 622	65.33
1990	3 739 542	2 642 757	61.22
1991	4 109 184	2 486 813	60.52
1992	4 434 795	2 695 580	60.78
1993	4 708 840	2 792 118	59.30
1994	5 014 444	2 879 637	57.43
1995	5 320 913	2 961 928	55.67
1996	5 571 482	3 121 139	56.02

Source: Superintendency of AFPs.

Size and composition of the Funds. The volume of pension funds managed by AFPs has risen steadily from 10% of GDP in 1985 to 39% in 1996. As Table 8 shows, the total amount of resources of the funds reached US$26.5 billion by the end of 1996 (37% of GDP).

The evolution of the funds shows the need for new *permanent* investment instruments to widen the range of alternatives in order to satisfy the increasing demand for financial assets of different nature. Since the reforms took place, three major forces have driven the portfolio composition of the pension funds: the evolution of the investment limits, the increase in the size of pension funds, and the development of the domestic capital market. During the first years, the small and unsophisticated capital market and the low volume of the funds were compatible with the investment limits set by the Central Bank. In the second half of the 1980s, as a result of the privatisation of public enterprises and the increase in the pension funds, the capital market deepened, allowing an increase in equity holdings in the AFPs portfolio. However, more than 90% of the AFPs equities portfolio was concentrated into just eight recently privatised utilities. In 1990, AFPs were also allowed to invest in real estate and foreign securities. The last important changes in the pension fund investment limits were introduced in the Capital Market Reform Law passed in 1994, which increased the number of eligible instruments, relaxed the limits and changed the criteria and procedures concerning risk rating.

Table 8. **Pension funds**
Million of US dollars

	Pension funds value	Fund/% of GDP
1981	291.82	0.84
1982	919.50	3.29
1983	1 670.24	5.86
1984	2 177.54	7.73
1985	3 042.00	10.03
1986	3 986.09	12.67
1987	4 883.07	14.20
1988	5 954.12	14.97
1989	7 358.64	17.65
1990	9 758.30	24.21
1991	13 810.67	31.37
1992	15 399.57	30.56
1993	19 788.07	37.02
1994	23 925.72	40.99
1995	25 433.17	38.32
1996	26 505.40	38.98

Source: Superintendency of AFPs.

Table 9. **Pension funds portfolio**
As a percentage; December each year

	1981	1982	1983	1984	1985	1992	1993	1994	1995	1996
Government and Central bank securities	21.8	26.0	44.5	42.1	42.4	40.9	39.3	39.7	39.4	42.1
Financial instruments										
Deposits $ certif.	61.9	26.6	2.7	12.2	20.4	9.4	6.1	4.8	5.3	4.2
Mortgage bond	9.4	46.8	50.7	42.9	35.2	14.2	13.1	13.7	15.8	17.9
Bonds and stocks	0.0	0.0	0.0	0.6	0.4	1.6	1.4	1.6	2.0	2.5
Enterprises										
Stocks	0.0	0.0	0.0	0.0	0.0	24.0	31.8	32.1	29.4	25.1
Bonds	0.6	0.6	2.2	1.8	1.1	9.6	7.3	6.3	5.3	4.7
Shares of inv. funds	0.0	0.0	0.0	0.0	0.0	0.2	0.3	0.9	2.6	3.0
Foreign instruments	0.0	0.0	0.0	0.0	0.0	0.0	0.6	0.9	0.2	0.5
Cash and current account deposits	0.0	0.0	0.0	0.5	0.5	0.1	0.1	0.0	0.1	0.0
Total pension funds	100	100	100	100	100	100	100	100	100	100

Source: Superintendency of AFPs.

As a consequence of the financial disintermediation process that began in 1986, the financial instruments (intermediated through the banking system) lost their relative weight in the pension fund's portfolio. In 1985, they represented 56% of the portfolio while at the end of 1996 they were only a 24.6%. At the same time, corporate stocks and bonds grew from 1.1% in 1985 to 32.8% in 1996 as a percentage of the total portfolio. This is the result of the change in investment restrictions as well as a switch in the corporate sector away from bank financing and to issuance of stocks and bonds. On the other hand, foreign instruments remain very small and well below legal limits. In December 1996, only 0.5% of the accumulated funds had been invested abroad. This is expected to change in the future.

Rates of Return. The rate of return of the pension funds portfolio has been very high during this period, well above the original expectations. The average rate of return for the period 1981-96 has reached 12.8% in real terms. This has been partly due to the fact that government subsidies to the financial system shielded the pension funds during the 1983-84 financial crash, and they reaped all the benefits of the recovery that started in the second half of the 1980s. However, most of the return in the second half of the 1980s and the 1990s has been genuine and is based on effective market returns of portfolio investments in Chile during the period.

The diversification of the pension funds portfolio towards equity allowed them to participate in the big capital gains that took place in the early 1990s, when domestic and international markets realised that Chilean assets were undervalued

Table 10. **Annual real rates of return, 1981-1996**
As a percentage; December each year

	Financial system[1]	Pensions accounts[2]
1981	13.2	12.9
1982	12.1	28.5
1983	7.8	21.2
1984	8.4	3.6
1985	8.2	13.4
1986	4.1	12.3
1987	4.3	5.4
1988	4.6	6.5
1989	6.8	6.9
1990	6.0	15.6
1991	4.8	29.7
1992	6.0	3.0
1993	6.4	16.2
1994	5.9	18.2
1995	6.2	–2.5
1996	6.8	3.5

1. Effective interest rates paid to operations of 90 to 365 days.
2. Real return of the system. Deflated by the CPI.
Source: Central Bank, Superintendency of AFPs; Budget Office estimates.

given the success of economic reforms and the political transition to democracy. The 1995 Mexican crisis affected adversely the price of equity, and the economic adjustment induced by the authorities as well as a significant fall in the terms of trade, contributed to produce a negative rate of return in 1995 for the first time since the advent of the new system.

6. Impact on the National Economy

Impact on Domestic Savings. The domestic savings impact of pension reforms such as the Chilean depends essentially on the way they are financed. The transition to a funded system that is not debt financed means an increase in taxes on current generations in order to finance the deficit of the old system and an increase in the stock of capital for the benefit of future generations. Thus on the basis of long-run considerations, the flow of savings must increase. The other side of the coin is a short-term drop in consumption (Diamond, Valdés). However, in the Chilean case there was also a reduction in the rate of contributions from 22% to 13% with the opposite effect. This can be interpreted as compensation for the reduction in benefits for the current generation which had to accept the change in retirement age as well as higher taxes. This is a risky decision which in this particular case seems to have gone well thanks to the capital gains that were mentioned in the previous section. In a more stable economy with mature financial markets, there is no room for this kind of compensation.

Since the Chilean reform has been fully tax-financed, there has been a significant rise in savings. Probably one of the most remarkable events in this transition has been the fact that government savings after the reform not only remained positive but have been growing, currently reaching about 5% of GDP. The high level of savings not only financed the old pension system deficit, but also a growing rate of public investment and a significant reduction of the public debt. Some might think that this very high burden on current generations was only possible because of military rule. However, these policies have continued after democratic rule was reinstated in 1990. One possible explanation lies in the traumas of periodic economic crises, with a period of economic chaos and extremely high inflation in the 1970s and an economic depression in the 1980s that brought unemployment up to 30% of the labour force.

Whether the reform has increased private savings directly is still an open question. Although some recent research suggest that the reform indeed contributed to the increase in private savings (Haindl, 1996; Morandé, 1996), it is worth noting that most of the growth in private savings has taken place in the corporate sector.

Pension fund evolution and their effect on financial markets. The accumulation of pension funds and their investment in financial markets has contributed to the development of important economic sectors. This influence was most decisive in the housing market since the availability of long term savings gave support to a private market for mortgage bonds. In 1996, 17.9% of the pension funds portfolio was invested in mortgage bonds. In the Chilean housing market, it means that two out of every three houses purchased have been financed by pension savings.

AFPs must also purchase disability and life insurance in order to cover the risk of disability or death of the affiliate. This has led to the development of a

Table 11. **Public savings (Central Government), 1987-1996**
As percentage of GDP

	Current income	Current expenditure	Public savings
1987	25.2	22.2	3.0
1988	22.3	20.0	2.3
1989	21.2	18.2	3.0
1990	20.5	18.1	2.4
1991	22.3	18.6	3.7
1992	22.4	17.5	4.9
1993	22.6	17.7	4.9
1994	21.9	17.2	4.7
1995	21.5	16.2	5.3
1996	22.6	17.0	5.6

Source: Budget Office.

competitive insurance market, allowing the affiliates to get higher benefits due to drops in premium rates from 29.5% in 1989 to 6.8% in 1995. The modality of life annuities in the new pension system has also contributed to strengthening the industry.

Pension funds are the largest investors in the Chilean capital market. The privatisation of public enterprises and the growth in the pension funds during the second half of the 1980s deepened the capital market. Stocks and bonds of privatised public enterprises grew from 1.1% in 1985 to 32.8% in 1996, as a percentage of the total portfolio. Pension funds optimised resource allocation in order to get the best yield/risk combination and have provided long term financing. This has also led to greater transparency and efficiency in stock and other financial assets markets. The risk rating industry developed as a result of the pension system reform; this has been a key element for the sound operation and transparency of the capital market. New financial instruments have been introduced to meet the growing demand of the pension funds.

7. Pension Fund Perspective

Pension funds have been growing steadily since the creation of the system and they are expected to continue growing for at least a decade. Notwithstanding the problem of a high number of non-contributors to the system, it can be considered mature. Most of the growth is due to the fact contributions are growing according to trends in employment, real wages and real rates of return, while benefits are still low due to the fact that most of the affiliates in the new system are of the working age.

The growing size of the funds poses a challenge for the domestic market in order to create new investment alternatives to satisfy the increasing demand for financial assets by the AFPs, as well as their risk diversification needs. It is expected that pension fund resources will be channelled – either directly or through intermediaries like investment funds – to new sectors such as infrastructure and mining.

Internationalisation. There is no doubt that sooner or later pension funds must invest a significant portion of their portfolio abroad, not only because of the size of the Chilean economy but mainly for risk diversification. The authorities have relaxed the rules to invest abroad, including new instruments that may be purchased by pension funds[4] and the possibility of carrying out hedging operations through derivatives. It also established a broader risk-rating for long-term debt instruments and short-term instruments, in turn, permitting investment in Brady Bonds and ADRs. Through an amendment to Law No. 3500, AFPs are allowed to invest in domestic investment funds whose sole objective is to invest abroad.[5]

At present, pension funds are allowed to invest 12% of their portfolio in foreign securities; of which, up to 12% in fixed return instruments and a maximum of

Table 12. **Pension funds future estimates**

	Pension funds value (US$ MM)[1]	Pension funds value/GDP[2]	Pension funds value (US$ MM)[3]	Pension funds value/GDP[2]
1997	3 305 412	47.30%	3 135 017	44.86%
1998	3 629 999	49.47%	3 386 740	46.16%
1999	3 981 418	51.68%	3 655 800	47.45%
2000	4 361 530	53.92%	3 943 232	48.75%
2001	4 772 501	56.19%	4 250 169	50.04%
2002	5 222 276	58.55%	4 583 632	51.39%
2003	5 708 383	60.96%	4 939 799	52.75%
2004	6 235 563	63.42%	5 322 078	54.13%

1. Assumed 6% yield.
2. Assumed GDP real growth of 5% per year.
3. Assumed 4% yield.

Source: Superintendency of AFPs.

6% in variable return instruments. Nevertheless, the foreign investment represented in 1996 only 0.5% of the portfolio. It is expected that the new regulations would facilitate investment abroad. However, the main impulse will come when interest rate differentials and exchange rate expectations make investment abroad more attractive. There are some encouraging signs pointing towards a slow change in the trend that has dominated exchange markets in Chile during the 1990s.

Investment in Infrastructure. The Chilean Government has decided to give a decisive role to the private sector in the development of infrastructure and a very ambitious programme of public works concessions has been launched. Due to recent amendments to the rules that regulate the capital market, investors could finance infrastructure works through direct and indirect instruments. At the beginning, some specific problems delayed this process, but they have been solved gradually and a growing role for pension funds in the financing of these projects is expected.

Administrative Costs. One of the major concerns about the new system is the high level of operational costs. This means that the high rates of return of the portfolio will not necessarily translate into better pensions. In 1984, for example, administrative costs were about 9% of wages, or 90% of contributions to the retirement system. These costs, however, declined gradually and by 1996, they amounted to 3% of wages or 10% of contributions. In terms of accumulated assets, administrative costs have declined from almost 15% in 1983 to 1.8% in 1993.

A particularly serious concern among analysts and policy makers is that the trend towards cost reduction has stopped in the last few years. As a result, a discussion on alternative ways to reduce these costs is taking place. Most of the analysts have focused on the role of marketing and sales costs. It has been estimated that in the first half of the 1990s, marketing and sales costs exceeded one-third of total costs. Moreover, there is evidence that in the last few years that these costs have increased significantly. Most of these increases have been related to the expansion of sales forces. The number of sales people in the system as a whole rose from 3 500 in 1990 to almost 15 000 in early 1995. This is particularly baffling since the system can be considered mature in terms of members and all this sales effort is focused on switching affiliates from one AFP to another. According to some analysts, limiting the participants ability to switch funds provides an efficient way of reducing administrative costs. Others, however, have argued that this initiative would greatly reduce competition, which could be troublesome since three AFP concentrate most of the active contributors to the system. Along these lines, it has been argued that a preferred approach would be to have participants who stay longer with a particular AFP be charged lower commissions.

It has also been argued that an effective way of reducing administrative costs is by tackling the costs of opening new accounts. Allowing AFPs to manage more than one retirement fund could, in principle, work in that direction. This way individuals could transfer their retirement savings to different funds, within the same AFP, at a reduced cost.

Fiscal Risks. One concern of the authorities is, of course, the size of the fiscal guarantees to the system. High administrative costs is a risk factor that could trigger a high number of minimum pensions and they should be monitored closely. Another factor is the attractiveness of early retirement under the "programmed withdrawals" mode, which triggers the fiscal guarantee once the individual fund is depleted. There is a bill in Congress which raises the requirements for early retirement and could reduce this risk; however, it has been a slow and complicated process.

Another risk factor is more of a *political* nature. As the economy and real wages grow, the value of minimum pensions is becoming less acceptable and political pressures to raise the value of the minimum pension are rising steadily. Of course, this has a significant fiscal impact in the short-term and this has been a factor to deter these pressures, but it is also a significant danger for public finances in the future as it brings more people below the line of the fiscal guarantee.

A final fiscal risk must be mentioned. This is the relatively low level of contributions as compared to members. This probably means that a large number of people "passed trough" the system at one point or another of their working life, but will not have enough funds to finance a decent pension and will not qualify for a minimum pension under the fiscal guarantee (20 years of contributions is one of the requirements). This means that in the next 10 to 20 years, the Chilean Government will face mounting pressures to relax the constraints to get access to minimum pensions.

Notes

1. Early retirement is possible if the individual capital account balance is sufficient to provide at least 50% of the average salary of the last ten years and the size of the calculated pension exceeds the minimum legal pension by at least 20%.
2. The value of the minimum pension today stands at about US$130 per month, which is close to 75% of the minimum wage. It is adjusted by inflation once a year, or every time that inflation accumulates more than 10% since the last adjustment, whichever comes first.
3. Thirty-five years is the number of working years assumed to obtain a normal pension.
4. New alternatives point at investment in foreign equities, foreign investment and mutual fund shares.
5. These investment funds shall be under the same regulation thet existing domestic funds and their shares will be traded in the local market.

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